

LOS INSECTOS DE LAS ISLAS JUAN FERNANDEZ

29. FULGOROIDEA (Homoptera)

R. G. FENNAH

The Imperial College of Tropical Agriculture
Trinidad, B. W. I.

El autor complementa su trabajo publicado en Proceedings of the Royal Entomological Society of London, 1955: 129-138, mencionando el material recogido en el tercer viaje del Rev. P. Dr. Guillermo Kuschel a las Islas Juan Fernández agregando tres especies nuevas, ilustrando todas las especies de esas islas y dando una clave para su determinación.

* * *

The present report is intended to supplement the account published in the Proceedings of the Royal Entomological Society of London (Fennah 1955: 129-138) and deals primarily with a further collection made by Dr. G. Kuschel through whose kindness the writer was enabled to examine this material. One species not represented in the second batch of material is referred to below in order to complete the account.

The second collection comprises 80 specimens, all belonging to the family Delphacidae: two specimens from the earlier collection are also considered here. A further genus (*Dicranotropis*) is added to the faunal list, together with three new species. The holotypes of species described below, and also of species described in the report cited above, have been deposited in the collection of the Department of Entomology, University of Chile. Paratypes of species of *Nesosydne* described in the earlier report have been deposited in the British Museum (Natural History).

It has not been necessary to modify the conclusion already reached concerning the source of this fauna, namely that the original immigrants came eastwards across the Pacific.

Family Delphacidae Leach

Tribe Alohini

Genus *Nesosydne* Kirkaldy

Kirkaldy, 1907, Proc. Hawaii, ent. Soc. 1: 161. Orthotype,
Nesosydne koae Kirkaldy loc. cit.

Key to species of *Nesosydne* in Juan Fernández

- 1. Lateral margins of pronotum as long as eye in same line,
strongly subfoliately carinate

vulcan Fennah

- Lateral margins of pronotum short, not nearly as long as eye in same line, and not at all carinate 2
2. Antennae with segments of equal length *sappho* Fennah
- Antennae with basal segment shorter than distal 3
3. Tegmina much surpassing abdomen, heavily infumed, with transverse veinlets pallid, membrane infumed or pale in part; wings fully developed; basal antennal segment as long as broad, or nearly so *orca* Fennah
- Tegmina not or scarcely surpassing abdomen, not marked as above; wings absent; basal antennal segment markedly longer than broad 4
4. Tegmina with apical cell $M_1 + 2$ 2.0 or 2.5 times as long as broad at widest part, Cu_1 not forked in corium, two transverse veins present, no veinlets traversing cell Sc or cell Cu_1 , apex of tegmen broadly rounded. Frons widest just distad of middle, lateral margins distinctly incurved to frontoclypeal suture *calypso* Fennah
- Tegmina with apical cell $M_1 + 2$ typically 3.5 times as long as broad at widest part. Frons widest three quarters from base 5
5. Tegmina acutely rounded distad of nodal line; only two transverse veins present, none traversing apical cell Sc or cell Cu_1 ; vein Cu_1 not forked in corium *philoctetes* Fennah
- Tegmina broadly rounded distad of nodal line; four or five transverse veinlets present, one traversing apical cell Sc and one traversing cell Cu_1 ; vein Cu_1 forked deeply in corium; supernumerary veinlets sometimes present distally 6
6. Second antennal segment twice as long as first; clypeus short, its lateral carinae each equal to width of clypeus at base, and not prominently developed *minos* Fennah
- Second antennal segment 1.5 times as long as first; clypeus elongate, its lateral carinae each much longer than width of clypeus at base, distinct and subfoliate *clio* n. sp.

1. *Nesosydne vulcan* Fennah (fig. 1)

Fennah 1955 Proc. R. ent. Soc. Lond. 24: 135.

Two males, two females and two nymphs, Juan Fernández: Masatierra; Camote, 550 m. on *Rea micrantha*, January 9, 1955 (G. Kuschel).

2. *Nesosydne philoctetes* Fennah (fig. 2)

Fennah 1955 Proc. R. ent. Soc. Lond. 24: 135.

The first sentence of the original description should be emended to read as follows. Antennae with second segment 1.9 times as long as first, basal segment 2.4 times as long as wide, second segment 4.0 times as long as broad.

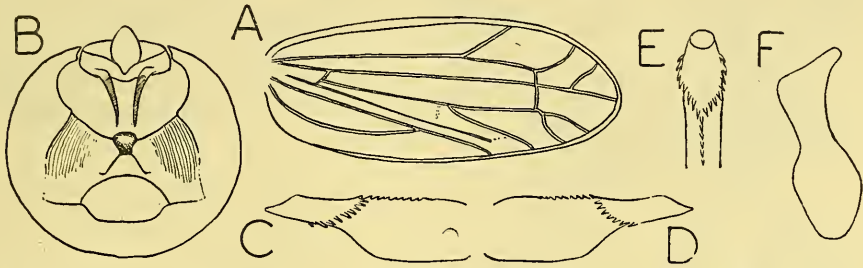


Fig. 1. *Nesosydne vulcan* Fennah. A, Tegmen; B, anal segment and pygofer, posterior view; C, aedeagus, right side; D, aedeagus, left side; E, aedeagus, dorsal view of apical part; F, left genital style, posterior view.

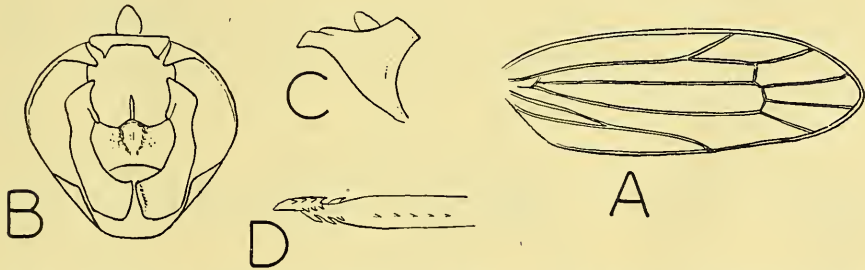


Fig. 2. *Nesosydne philoctetes* Fennah. A, Tegmen; B, pygofer, anal segment and genital styles, posterior view; C, anal segment of male, right side; D, aedeagus, right side.

Four males and two females, Juan Fernández: Masatierra; Piedra Agujereada, 500 m. March 12, 1955; Plazoleta del Yunque, 200 m., March 3, 1955 (G. Kuschel)

3. *Nesosydne oreas* Fennah (fig. 3)

Fennah 1955 Proc. R. ent. Soc. Lond. 24: 133.

Two males and three females, Juan Fernández, Masatierra; Cerro Chumacera, February 22, 1951; Piedra Agujereada, 500 m., March 12, 1955. Masafuera; Quebrada de los Cabreros, 350 m., January 23, 1955, Inocentes Altos, 1200 m., February 20, 1955. (G. Kuschel).

4. *Nesosydne calypso* Fennah (fig. 4)

Fennah 1955 Proc. R. ent. Soc. Lond. 24: 134.

Post tibial calcar with 10 or 11 teeth. The hind margin and disc of the pronotum, and the mesonotal disc sometimes entirely pallid, and the basal abdominal tergites orange red.

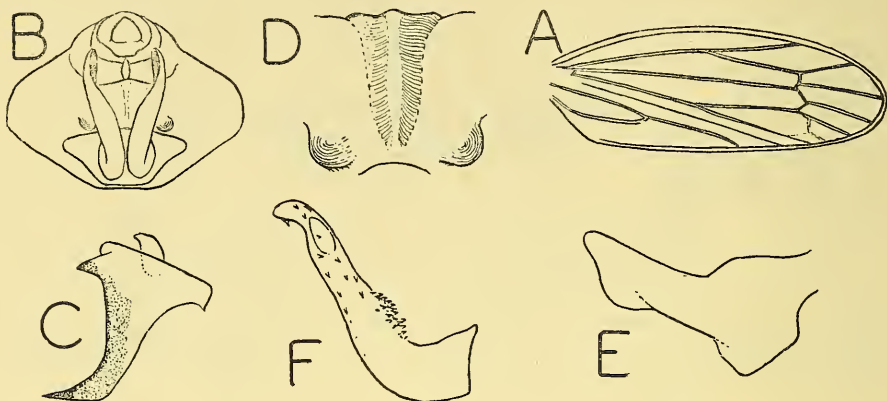


Fig. 3. *Nesosydne oreas* Fennah. A, Tegmen; B, male genitalia, posterior view; C, anal segment of male, right side; D, armature of diaphragm; E, right genital style, side view; F, aedeagus, right side, orifice seen by transparency.

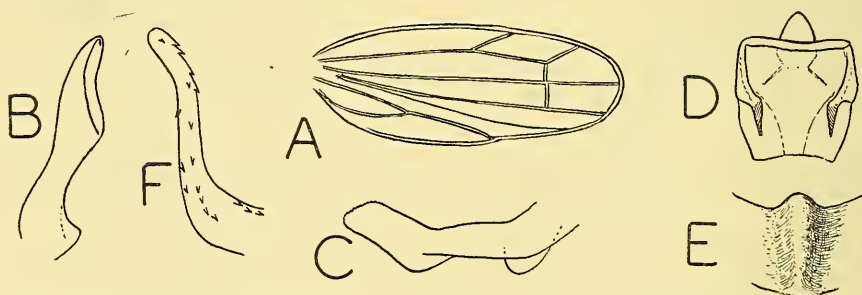


Fig. 4. *Nesosydne calypso* Fennah. A, Tegmen; B, left genital style, posterior view; C, left genital style, side view; D, anal segment of male, posterior view; E, armature of diaphragm; F, aedeagus, right side.

Eleven males, fourteen females and two nymphs, Juan Fernández: Masafuera; Quebrada de las Casas, January 20, February 3, 1955 on *Gunnera masafuerac*; Inocentes Altos, 1,200 m. February 4, 20, 1955 on *Drimys confertifolia*; Quebrada Rodríguez 1,100 m., February 9, 1955; La Correspondencia, 1,150 - 1,400 m., January 28/29, 1955.

5. *Nesosydne minos* Fennah (fig. 5)

Fennah 1955 Proc. R. ent. Soc. Lond. 24: 132.

The number of teeth on the post-tibial calcar varies between six and nine.

Eleven males, nine females and four nymphs, Juan Fernández: Masatierra; Alto Pangal, 600 m., March 5, 1955; Piedra Agujereada 500 m., March 12, 1955; Masafuera; Cordón del Barril, 1200 m., February 12, 1955,

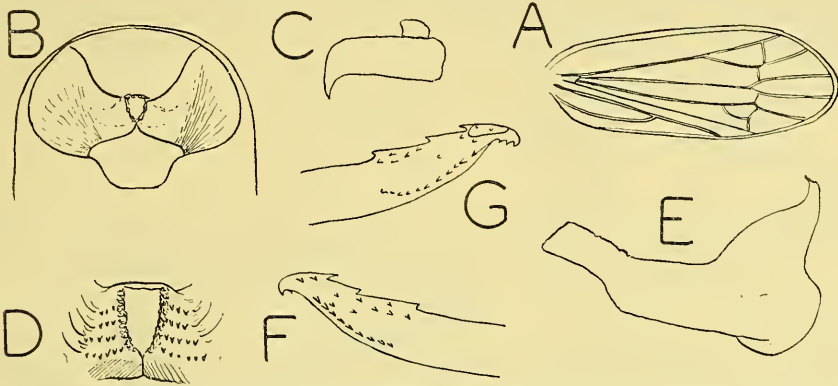


Fig. 5. *Nesosydne minos* Fennah. A, Tegmen; B, pygofer, postero-ventral view; C, anal segment of male, right side; D, armature of diaphragm; E, right genital style, side view; F, apical part of aedeagus, right side; G, apical part of aedeagus, left side.

on *Pernettya rigida*; Quebrada de las Casas, February 3, 1955 on *Gunnera masafuerae*; La Correspondencia, 1,150 - 1,400 m., January 28, 29, 1955. (G. Kuschel).

6. *Nesosydne sappho* Fennah (fig. 6)

Fennah 1955 Proc. R. ent. Soc. Lond. 24: 131.

One female, Juan Fernández, Masatierra; Alto Inglés, 300 m., February 28, 1955 (G. Kuschel).

7. *Nesosydne clio* sp. n. (fig. 7)

Antennae with second segment longer than first (1.5 : 1), first segment longer than broad (2.3 : 1), second longer than broad (3.5 : 1). Median carina of frons forking at curvature into vertex. Clypeus elongate, its lateral carinae subfoliate and each much longer than greatest width of clypeus. Rostrum scarcely attaining post-trochanters, apical joint about four-fifths length of subapical. Tegmina reaching to apex of abdomen; wings absent.

Post tibiae laterally 2-spined, apically 5-spined; calcar 10-toothed, basal metatarsal joint with 6 teeth, second metatarsal joint with 4 teeth.

Intercarinal areas of frons and clypeus, vertex, pronotum and mesonotum, pleurites, procoxae and mesocoxae at base, longitudinal submarginal stripes on femora, tibiae except at apex, protarsi and mesotarsi and basal portions of metatarsal segments, and abdomen except dorsally at base and latero apical angles of each segment and hind margin of seventh and eighth ventrites, dark fuscous. Carinae of head and thorax, antennae except for a fuscous suffusion, five rounded spots along hind margin of pronotum behind each eye, and lighter parts of coxae and legs and abdomen testaceous to stramineous.

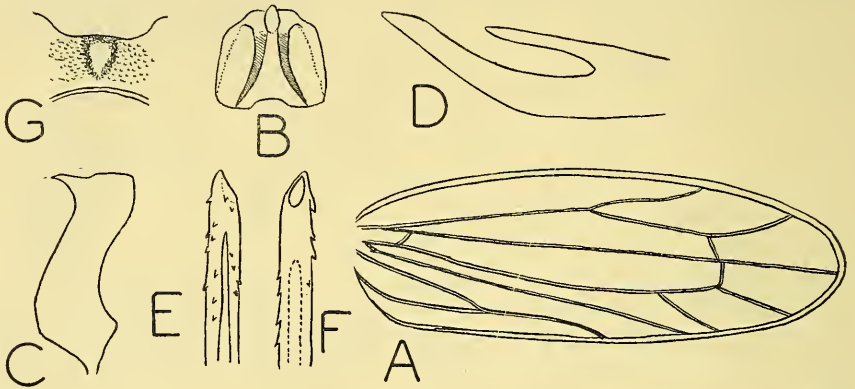


Fig. 6. *Ncsosydne sappho* Fennah. A, Tegmen; B, anal segment of male, posterior view; C, right genital style; D, sketch outline of aedeagus, right side; E, apex of aedeagus, dorsal view; F, apex of aedeagus, ventral view; G, armature of diaphragm.

Tegmina hyaline, Sc + R at base and basal margin of clavus, a broad suffusion from node to apex of clavus, including claval margin, veins distad of this band, and apical margin, fuscous; transverse veinlets hyaline.

Anal segment of male narrow, ring-like, with latero-apical angles each produced ventrad into a very short tooth-like spine. Pygofer in posterior view only very slightly wider than deep, laterodorsal angles not at all produced. Diaphragm deep at sides, moderately narrow at middle, dorsal margin of median area broadly concave, armature developed in form of a broad vertical ridge strongly produced caudad, and slightly constricted in its ventral half. Aedeagus moderately long, curved dorsocaudad, distally tapering, a row of minute teeth ventrally in basal half, distally extending upward across left side of aedeagus to join a short row of coarser teeth laterodorsally; a row of coarse teeth laterodorsally on right, meeting its counterpart of left side subapically, one or two minute decurved teeth at apex. Orifice lenticular, opening subapically on left.

Genital styles broadly curved in profile, with ascending portion relatively slender; in posterior view, very obtusely angulate at middle, thence directed dorsad and weakly laterad, apex rounded-oblique.

Male: length, 3.5 mm, tegmen, 3.1 mm.

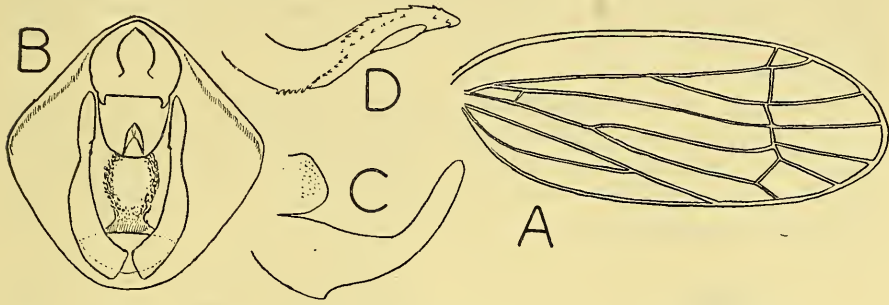


Fig. 7. *Nesosydne clio* sp. n. A, Tegmen; B, anal segment, pygofer and genital styles, posterior view; C, left genital style and armature of diaphragm, side view; D, aedeagus, left side intermediate row of spines seen by transparency.

Holotype male, Juan Fernández: Masatierra; Bahía Cumberland, January 1, 1952, (G. Kuschel). This species, in general form of genitalia, resembles only *N. minos* Fenn. and *N. oreas* Fenn. It differs from the former in the shape of the pygofer and of the armature of the diaphragm, and in the shape of the genital styles and of the aedeagus; while from *N. oreas* it differs in all these characters and also in the spinose ornamentation of the anal segment.

Tribe Delphacini

Genus *Dicranotropis* Fieber

Fieber 1866 Verh. zool. bot. Ges. Wien. 16: 521 Logotype, *Delphax hamata* Boheman Svensk. vet. Akad. 1847: 45.

1. *Dicranotropis acheron* sp. n. (fig. 8, A)

Frontal carinae uniting below level of eye. Post-tibiae laterally 2-spined, apically five-spined, calcar with twenty or more minute teeth, basal metatarsal joint with seven teeth, second tarsal joint with four teeth.

Fuscous-piceous; carinae of head and thorax, antennae, lateral fields of pronotum, and legs pallid whitish-stramineous; vertex, disc of pronotum and of mesonotum, anal segment and posterior margin of pygofer yellow. Intercarinal areas of frons distally, pronotum behind eyes and anterior portion of lateral field of pronotum, testaceous; dorsal surface of abdomen

at base and apex orange yellow. Brachypterous tegmina yellowish hyaline, margin white except for a fuscous interruption at level of claval apex.

Anal segment ring-like, each latero-apical angle strongly produced lateroventrally in a stout process which in turn is produced into a long spine.

Pygofer with anal foramen rhomboidal, laterodorsal angles not produced. Diaphragm widely perforated above, strongly narrowed at middle, armature developed only as a narrow dark lenticular area of thickened epidermis along upper margin.

Aedeagus rather long, slender, with genital orifice ovate, opening on left side at apex. Three teeth situated dorsally on left, five large and widely spaced on right, descending obliquely from dorsal surface near apex to ventral margin at middle, a curved spine near base on left directed laterad then caudad weakly serrate on its lower edge.

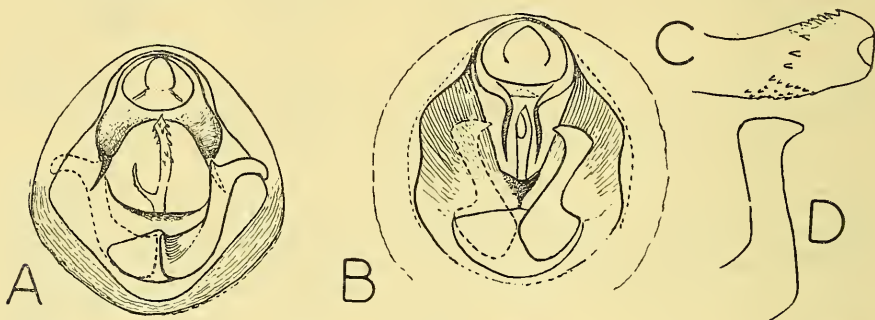


Fig. 8. A, *Dicranotropis acheron* sp. n. Male genitalia, posterior view, left genital style and concealed spine of anal segment indicated in broken line.

Fig. 8. B-D, *Delphacodes cerberus* sp. n. B, male genitalia, posterior view, left genital style indicated by broken line; C, apex of aedeagus, left side; D, left genital style.

Genital styles moderately long, curved upward and narrowed distally, abruptly and strongly produced laterad near apex and slightly recurved at tip: inner angle acute, slightly produced.

Male: length, 2.6 mm.

Holotype male Juan Fernández: Masatierra; Bahía Cumberland, February 14, 1955 (G. Kuschel). This species is distinguished by the shape of the male genitalia. It differs from the widespread *D. cognata* Muir in the shape of the genital styles.

Genus *Delphacodes* Fieber

Fieber 1866 Verh. zool. bot. Ges. Wien. 16: 524. Logotype, *Delphax mulsanti* Fieber 1866 op. cit.: 526.

1. *Delphacodes cerberus* sp. n. (fig. 8, B-D)

Frons as broad at base as at apex, lateral margins subparallel, slightly arcuate, median carina forked at curvature into vertex. Antennae with basal

segment distinctly longer than broad, about two-thirds length of second segment, ocelli very small, almost obsolete. Post-tibiae laterally two-spined, apically five-spined, basal metatarsal joint seven-spined, second metatarsal four-spined, calcar with 12 teeth.

Testaceous; intercarinal areas of frons and genae, except for a few diffuse round spots, pronotum behind eyes in part, and legs rather lightly

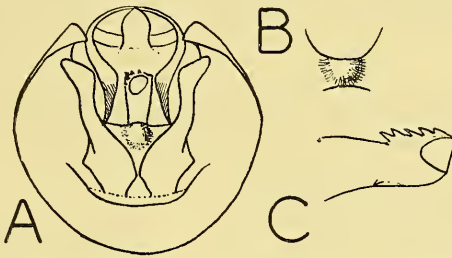


Fig. 9. *Delphacodes selkirki* (Muir). A, male genitalia, posterior view; B, armature of diaphragm; C, apex of aedeagus, left side.

suffused fuscous. Intercarinal areas of vertex, pronotum and mesonotum, clypeus and thoracic pleurites darker fuscous. Tegmina (brachypterous) yellowish-hyaline, veins setose, weakly suffused yellowish-fuscous, a brown tinge near apex of clavus.

Anal segment small, ring-like, with a pair of long spinose processes

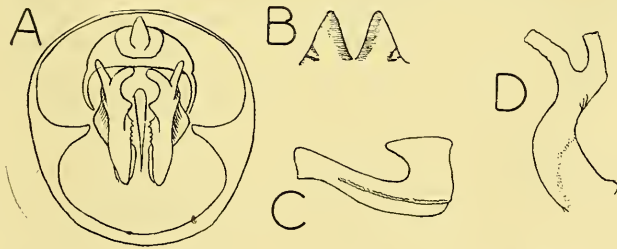


Fig. 10. *Delphacodes kuscheli* Fennah. A, male genitalia, posterior view; B, dorsal margin of median portion of diaphragm; C, aedeagus, right side; D, right genital style, side view.

arising submedially, directed ventrad, and lying close to aedeagus. Pygofer with foramen rounded, laterodorsal angles not at all produced; diaphragm deep laterally, strongly narrowed to middle; armature polished, black, produced caudad in its upper half.

Aedeagus short, stout, laterally compressed, widening distad. An oblique row of 3-5 teeth dorsolaterally on right near apex; a steeply oblique row of 8 teeth on left descending from dorsal surface at apex to near ventral

margin one third from apex; median third of ventral part of aedeagus bearing about thirty small teeth in three irregular rows. Orifice oval, terminal. Genital styles moderately long, angulately bent dorsolaterad near middle with inner apical angle acute, as figured.

Male (brachypterous): length, 3.6 mm.

Female (brachypterous): length, 3.8 mm.

Holotype male and one male and five females, Juan Fernández: Masafuera; Inocentes Bajos, 800 m. February 12, 1955 on *Drimys confertifolia* (type locality), La Correspondencia, 1,150 - 1,400 m., January 28-30, 1955 (G. Kuschel).

This species superficially recalls *Chloriona paludum* Kirk., but differs markedly in the detailed structure of the male genitalia.

2. *Delphacodes selkirki* (Muir) (fig. 9)

Sogata selkirki Muir 1924, in Bergroth Nat. Hist. Juan Fernández 3 (Zool.): 401.

One brachypterous male, Juan Fernández; Masatierra: Piedra Agujereada, 500 m., March 12, 1955.

3. *Delphacodes kuscheli* Fennah (fig. 10)

Fennah 1955 Proc. R. ent. Soc. Lond. 24: 137.

This species, so far known only from Masatierra, was not represented in the collections.